

### ABSTRACT

A carrier restoration apparatus for acquiring a frequency offset and tracking a phase jitter from a pass-band digital signal having the frequency offset and the phase jitter is disclosed. In the apparatus, a frequency acquisition PLL section for acquiring the frequency offset and a phase tracking PLL section for tracking the residual phase jitter are separately constructed, and the apparatus operates in two modes for first acquiring the frequency offset and then tracking the residual phase jitter. Thus, a rapid acquisition/tracking is performed so as to minimize the frequency offset and phase jitter of several hundred KHz produced from a tuner or an RF oscillator, and a high-reliability acquisition/tracking can be performed even under the low SNR and serious channel ISI (i.e., ghost).